U.S. Department of the Interior • U.S. Geological Survey

MINERAL INDUSTRY SURVEYS

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VANADIUM IN OCTOBER 1996

The total reported consumption of vanadium in October decreased by about 16% from consumption in September, according to the U.S. Geological Survey. An increase of 12% in the stainless and heat-resisting steel end use category was more than offset by moderate to large decreases in the other end use categories. Consumption in the carbon steel end use category, a relatively large consuming sector, was down by more than 36%. Total consumption in October was 293 metric tons, about 20% less than consumption in October 1995. The year to date consumption through October 1996, was 3,700 tons, about 4% more than consumption for the same period in 1995.

Update: Duty-free Status for South African V_2O_5.

Duty-free status under the Generalized System of Preferences was restored to vanadium pentoxide (V_2O_5) from South Africa, retroactive to October 1, 1996. A Presidential proclamation on October 17, 1996, included an annex that frees importers of South African V_2O_5 from paying a 13.0% duty on the material. GSP status will be in effect through May 31, 1997. U.S. imports of V_2O_5 from South Africa should increase now that the duty has been removed. The change is not likely to have an immediate impact on domestic ferrovanadium producers because most do not rely on South African V_2O_5. Previously, almost all South African vanadium sales were in the form of vanadium bearing slag. Last year South African vanadium producer Highveld Steel & Vanadium Corp. restarted V_2O_5 production at its subsidiary Transvaal Alloys. Transvaal, closed in 1994, has the capacity to produce 5 million pounds per year of V_2O_5. At about the same time Highveld reduced its export of vanadium-bearing slag and began converting some of this material to ferrovanadium. Soon after the Defense Authorization Bill was signed into law, the Defense Logistics Agency (DLA) announced, in its annual materials plan for fiscal year 1997, the maximum allowable quantities of materials that can be sold during the year. Included was 200 short tons of vanadium pentoxide.

On December 12, 1996, DLA rejected all bids for vanadium pentoxide under Invitation for Bids, DLA-VANADIUM-001. Bids ranged from $2.98 to $3.08 per pound. However, V_2O_5 sales on the open market at the time of the bid opening were in the range $3.25-$3.35 per pound. Vanadium pentoxide is offered for sale on the fourth Thursday of each month. In consideration of the observance of Christmas, the bid opening scheduled for the fourth Thursday of December (December 26) was rescheduled to January 9, 1997. Bids are due by 10:00 a.m. at 8725 John J. Kingman Road, Suite 3339 (mail) or Suite 428 (hand delivery), Fort Belvoir, VA 22060-6223. Requests for copies of the invitation and other inquiries should be directed to Kerri Chambers (703) 767-5498.

Prepared by the Metals Section and the Data Collection and Coordination Section, January 6, 1997.

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TABLE 1
U.S. CONSUMPTION AND CONSUMER STOCKS OF VANADIUM, BY FORM, IN 1996 1/

(Kilograms, contained vanadium)

	September		October	
	Consumption	Stocks	Consumption	Stocks
Ferrovanadium 2/	312,000	328,000	252,000	295,000
Oxide	1,120	6,610	1,120	6,610
Vanadium-aluminum alloy	W	10,300	W	9,690
Vanadium chemicals 3/	W	W	W	W
Other 4/	37,500	5,430	40,000	5,430
Total	350,000	350,000	293,000	317,000

W Withheld to avoid disclosing company proprietary data; included with "Other."
1/ Data are rounded to three significant digits; may not add to totals shown.
2/ Includes other vanadium-iron-carbon alloys as well as vanadium oxides added directly to steel.
3/ Includes vanadates, chlorides and other specialty chemicals.
4/ Includes other vanadium alloys, vanadium metal, and items indicated by symbol "W."

TABLE 2
U.S. CONSUMPTION OF VANADIUM, BY END USE 1/

(Kilograms, contained vanadium)

		1996		
	1995	September	October	Year to date p/ 2/
Steel:				
Carbon	1,870,000	121,000	76,900	1,350,000
Stainless and heat-resisting	31,800	1,610	1,810	18,400
Full alloy	833,000	69,800	63,900	890,000
High-strength low-alloy	1,070,000	81,900	72,000	759,000
Tool	443,000	34,800	35,000	318,000
Unspecified	W	--	--	--
Total steel	4,240,000	309,000	250,000	3,340,000
Cast irons	39,600	W	W	W
Superalloys	20,400	1,760	1,080	14,400
Alloys (excluding steels and superalloys):				
Cutting and wear-resistant materials	271	20	20	204
Welding and alloy hard-facing rods and materials	3,440	W	W	W
Nonferrous alloys	W	W	W	W
Other alloys 3/	307,000	W	W	W
Chemical and ceramic uses:				
Catalysts	W	W	W	W
Other 4/	W	W	W	W
Miscellaneous and unspecified	20,200	39,600	42,400	349,000
Total consumption	4,640,000	350,000	293,000	3,700,000

p/ Preliminary. W Withheld to avoid disclosing company proprietary data; included with "Miscellaneous and unspecified."
1/ Data are rounded to three significant digits; may not add to totals shown.
2/ May include revisions to previous months' data.
3/ Includes magnetic alloys.
4/ Includes pigments.

TABLE 3
U. S. EXPORTS OF ALUMINUM-VANADIUM MASTER ALLOY, FERROVANADIUM, OXIDES AND HYDROXIDES OF VANADIUM, AND VANADIUM METAL IN SEPTEMBER 1996 1/

(Kilograms, vanadium content unless otherwise specified)

Material and country	Quantity	Value	Year to date p/ Quantity	Year to date p/ Value
Aluminum-vanadium master alloy: 2/				
Argentina	--	--	1,080	$14,000
Australia	--	--	499	6,380
Austria	--	--	3,540	36,700
Barbados	14,000	$173,000	14,000	173,000
Canada	--	--	83,800	1,020,000
Chile	--	--	770	10,000
Germany	3,510	52,000	4,420	65,400
Ireland	185	4,600	782	14,600
Japan	--	--	20,100	313,000
Korea, Republic of	--	--	3,270	42,500
Malaysia	--	--	897	11,700
Mexico	--	--	22,200	295,000
Philippines	--	--	409	5,310
Russia	--	--	15,200	274,000
Suriname	--	--	139	6,460
Switzerland	--	--	571	7,420
United Kingdom	1,210	22,400	48,600	857,000
Venezuela	--	--	3,810	49,600
Total	18,900	252,000	224,000	3,200,000
Ferrovanadium:				
Australia	--	--	546	6,830
Canada	19,300	365,000	219,000	3,960,000
Mexico	7,480	143,000	108,000	2,090,000
Venezuela	--	--	2,300	76,800
Total	26,700	508,000	330,000	6,130,000
Vanadium pentoxide (anhydride): 3/				
Austria	--	--	4,340	41,200
Belgium	--	--	7,850	103,000
Chile	18	2,680	18	2,680
Italy	8,610	129,000	90,500	783,000
Japan	--	--	13,800	126,000
Kuwait	--	--	4,970	34,300
Mexico	--	--	4,700	46,500
Pakistan	--	--	6,040	83,600
Peru	2,260	10,400	2,260	10,400
Taiwan	--	--	632	6,000
United Kingdom	--	--	40,100	331,000
Total	10,900	142,000	175,000	1,570,000
Other oxides and hydroxides of vanadium:				
Argentina	360	3,200	360	3,200
Australia	--	--	675	6,000
Canada	6,530	64,100	187,000	1,360,000
France	--	--	15,200	128,000
Germany	--	--	6,290	67,300
Italy	--	--	17,200	137,000
Japan	--	--	100	3,610
Russia	--	--	12,300	110,000
South Africa	--	--	61,100	474,000
Spain	--	--	2,210,000	9,030,000
Switzerland	--	--	13,800	74,100
Total	6,890	67,300	2,520,000	11,400,000
Vanadium metal, including waste and scrap: 2/				
Australia	--	--	2,320	92,000
Canada	--	--	1,750	46,700
Germany	--	--	636	18,100
Taiwan	--	--	131	11,900
United Kingdom	250	6,890	84,800	578,000
Total	250	6,890	89,700	747,000

p/ Preliminary.
1/ Data are rounded to three significant digits; may not add to totals shown.
2/ Gross weight.
3/ May include catalysts containing vanadium pentoxide.

Source: Bureau of the Census.

TABLE 4
U.S. IMPORTS FOR CONSUMPTION OF ALUMINUM-VANADIUM MASTER ALLOY,
FERROVANADIUM, OXIDES AND HYDROXIDES OF VANADIUM, AND VANADIUM METAL IN SEPTEMBER 1996 1/

(Kilograms, vanadium content unless otherwise specified)

Material and country	Quantity	Value	Year to date p/ 2/ Quantity	Year to date p/ 2/ Value
Aluminum-vanadium master alloy: 3/				
Germany	--	--	1,610	$16,500
Russia	4,200	$136,000 4/	4,200	136,000
Ferrovanadium:				
Austria	--	--	31,300	495,000
Belgium	--	--	62,700	947,000
Canada	97,900	1,550,000	491,000	7,620,000
China	43,600	619,000	141,000	1,940,000
Czech Republic	18,200	262,000	373,000	5,190,000
Germany	--	--	2,690	32,300
Russia	--	--	70,400	1,440,000
South Africa	16,100	244,000	140,000	2,120,000
Tajikistan	--	--	40,500	626,000
Total	176,000	2,670,000	1,350,000	20,400,000
Vanadium pentoxide (anhydride): 5/				
China	--	--	40,800	329,000
France	--	--	10,200	252,000
Germany	90 4/	3,630 4/	517	21,700
Hong Kong	--	--	198	18,700
South Africa	30,700 4/	381,000 4/	300,000	3,730,000
United Kingdom	--	--	4	27,200
Total	30,800	384,000	352,000	4,380,000
Other oxides and hydroxides of vanadium:				
France	--	--	304	48,600
Germany	--	--	1	2,610
United Kingdom	--	--	6,030	76,000
Total	--	--	6,340	127,000
Vanadium metal, including waste and scrap: 3/				
France	--	--	90	8,500
Germany	93	35,400	19,900	440,000
Russia	4	17,900	1,150	92,900
United Kingdom	3	6,080	4	10,300
Total	100	59,300	21,200	552,000

p/ Preliminary.
1/ Data are rounded to three significant digits; may not add to totals shown.
2/ May include revisions to previous months' data.
3/ Gross weight.
4/ All or part of these data have been referred to the Bureau of the Census for verification.
5/ May include catalysts containing vanadium pentoxide.

Source: Bureau of the Census.

TABLE 5
U.S. IMPORTS FOR CONSUMPTION OF VANADIUM-BEARING
ASH, SLAG AND RESIDUES IN SEPTEMBER 1996 1/

(Kilograms, vanadium pentoxide content)

Material and country	Quantity	Value	Year to date p/ Quantity	Year to date p/ Value
Ash and residues:				
Canada	--	--	173,000	$533,000
Germany	2,570	$1,850	2,570	1,850
Mexico	78,000	217,000	496,000	1,690,000
Netherlands	--	--	7,760	2,670
Netherlands Antilles	--	--	87,900	168,000
Portugal	--	--	7,130	6,470
United Kingdom	--	--	14,800	3,260
Total	80,600	218,000	789,000	2,410,000
Ash and residues (not from the manufacture of iron and steel):				
Canada	196,000 2/	45,000 2/	1,210,000	274,000
Slag, from the manufacture of iron and steel:				
South Africa	--	--	879,000	3,390,000
Other residues: (Not advanced in value)	--	--	--	--

p/ Preliminary.
1/ Data are rounded to three significant digits; may not add to totals shown.
2/ All or part of these data have been referred to the Bureau of the Census for verification.

Source: Bureau of the Census.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF MISCELLANEOUS
VANADIUM CHEMICALS IN SEPTEMBER 1996 1/

(Kilograms, vanadium content)

Material and country	Quantity	Value	Year to date p/ 2/ Quantity	Year to date p/ 2/ Value
Sulfates:				
India	--	--	25	$14,900
Vanadates:				
Germany	--	--	3,340	72,700
South Africa	--	--	46,200	319,000
Switzerland	--	--	99	1,260
Total	--	--	49,600	393,000
Hydrides and nitrides:				
South Africa	--	--	255,000	4,630,000

p/ Preliminary.
1/ Data are rounded to three significant digits; may not add to totals shown.
2/ May include revisions to previous months' data.

Source: Bureau of the Census.